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import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

# Upload the dataset
uploaded = files.upload()

# Import necessary libraries
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.linear_model import PassiveAggressiveClassifier
from sklearn.metrics import accuracy_score, confusion_matrix,
classification_report

# Load dataset
data = pd.read_csv("news.csv")

# Preprocess data (e.g., remove stopwords, punctuation, etc.)
# Split data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(data['text'],
data['label'], test_size=0.2, random_state=42)

# Initialize TfidfVectorizer
tfidf_vectorizer = TfidfVectorizer(stop_words='english', max_df=0.7)

# Fit and transform training data
tfidf_train = tfidf_vectorizer.fit_transform(X_train)

# Transform testing data
tfidf_test = tfidf_vectorizer.transform(X_test)

# Initialize PassiveAggressiveClassifier
pac = PassiveAggressiveClassifier(max_iter=50)
pac.fit(tfidf_train, y_train)

# Predict on the testing set
y_pred = pac.predict(tfidf_test)

# Evaluate model
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accuracy = accuracy_score(y_test, y_pred)
confusion_mat = confusion_matrix(y_test, y_pred)
class_report = classification_report(y_test, y_pred)

print("Accuracy:", accuracy)
print("Confusion Matrix:\n", confusion_mat)
print("Classification Report:\n", class_report)
```

OUTPUT:

news.csv(text/csv) - 30696129 bytes, last modified: 04/02/2024 - 100% done

Saving news.csv to news (1).csv

Accuracy: 0.9337016574585635

Confusion Matrix:

[[586 42]

[42 597]]

Classification Report:

	precision	recall	f1-score	support
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FAKE	0.93	0.93	0.93	628
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REAL	0.93	0.93	0.93	639
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accuracy			0.93	1267
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macro avg	0.93	0.93	0.93	1267
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weighted avg	0.93	0.93	0.93	1267
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